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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/049,333 | 11/12/2002 | Xiaohong Zhang | U 013869-1 | 9929 |

140 7590 06/05/2003

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| EXAMINER |
|---|
| MOORE, MARGARET G |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1712 | |

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

8 & 10

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/049,333 | ZHANG ET AL. | |
| | Examiner | Art Unit | |
| | Margaret G. Moore | 1712 | |

*-- The MAILING DATE of this communication appears on the cover she t with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *12 November 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1 to 15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 to 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. Claims 1 to 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what is embraced by the claimed powdery silicone rubber, particularly by the term "chemical crosslinking". It would appear that some type of crosslinking would be required to form a fully vulcanized silicone rubber. This crosslinking results in chemical bonds, and thus would be considered chemical crosslinking. Irradiation, which the specification details as a means of obtaining the fully vulcanized silicone rubber, will result in crosslinking between siloxane polymers that will be "chemical crosslinking". Note for instance page 137 of "Polymer Chemistry" which states that crosslinking by irradiation is an example of chemical crosslinking. Clarification of this negative proviso is required.

2. Claims 2, 3, 5, 6, 8, 9, 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "preferably" renders these claims indefinite since this confuses the breadth of the claim.

In claim 5, the phrase "the fully vulcanized powdery silicone rubber" lacks antecedent basis. It is unclear from this language if "the" refers to a particular silicone rubber or not.

In claim 6, the words "polymer of copolymer" makes no sense. Also it is unclear what is embraced by "lower molecular weight" since this is a subjective term.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Romenesko et al. and Harashima et al.

Romenesko et al. teach free flowing silicone polymer powders having a particle size of from 1 to 1000 microns, clearly delineating the upper particle size in claim 2. The powders are prepared by admixing a polysiloxane and a silica filler. Since there is no crosslinking occurring in this powder, it appears to meet the negative proviso in claim 1. Also, since these ingredients are thoroughly mixed, the resulting powder would appear to be homogeneous.

Harashima et al. silicone rubber powders. Column 4, lines 40 to 45, teaches that the rubbers can be prepared by high energy beam irradiation. Applicants' specification defines this as a means of producing a powder that is "not chemically crosslinked" and as such this would appear to meet the negative proviso in claim 1. Line 62 of column 1 specifically delineates a particle size range that anticipates claim 2. Column 4 describes forming a homogenous rubber mixture, thus meeting the requirement of claim 4.

5. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al.

Takahashi et al. teach a polysilsesquioxane silicone powder. See the bottom of column 4. Since this powder is prepared by cohydrolysis of silanes rather than crosslinking of siloxane polymers, this appears to meet the negative proviso. Note that the particle sizes taught on column 5 anticipate claim 4.

6. Claims 5 to 8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Harashima et al.

Harashima et al. teach on column 4 irradiating a silicone dispersion to obtain a powdery silicone rubber. This specifically teaches high energy beams, meeting the limitation of claim 8. Column 3 teaches various silicone polymers that can be used in this polymerization, and since crosslinking occurs, one of the polysiloxanes can inherently be considered a crosslinking agent. Specifically, SiH containing siloxanes are common-

ly considered to be crosslinking agents when reacting with Si-vinyl containing siloxanes. In this manner the instant claims are anticipated.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 9, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harashima et al.

With regards to claim 9, adjusting the radiation dose in an effort to optimize the results of a vulcanization process would have been well within ordinary skill and routine optimization for one having ordinary skill in the art.

With regards to claim 12, the Examiner notes that adjusting the amount of SiH siloxane in the irradiation process would have also been well within the skill of the ordinary artisan, especially in view of the teachings on column 3 with regards to the molar ratios. Also note Reference Example 1 which, though not an irradiated composition, uses a crosslinking agent in an amount within the claimed range. Thus the skilled artisan would have found the selection of such an amount of crosslinking agent to have been obvious and within routine experimentation of Harashima et al.

With regards to claims 13 and 14, the Examiner notes that spray drying is a well known and conventional means of obtaining a vulcanized powder. Since one must obtain a powder silicone rubber in Harashima et al., one would have been motivated to use a conventional means of isolating a powder from a dispersion and thus would have found spray drying or precipitation drying to have been obvious.

9. Claim 15 provides for the use of the silicone rubber, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process

applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 15 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

The Examiner also notes, for the record, that this claim is improperly multiply dependent.

10. Qiao et al. is cited as being of general interest, in that it teaches powdery rubbers with the exception of silicone rubbers.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Margaret G. Moore whose telephone number is 703-308-4334. The examiner can normally be reached on Monday to Wednesday and Friday, 10am to 4pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on 703-308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9311 for regular communications and 703-872-9310 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Margaret G. Moore
Primary Examiner
Art Unit 1712

mgm
May 29, 2003